

## REMARKS

Applicants have amended their claims in order to further clarify the definition of various aspects of the present invention. Specifically, each of claims 25 and 31 has been amended to recite that the polyimide precursor is such that a 20 $\mu$ m thick film thereof has a transmittance, at 365nm, of at least 40%. See, for example, claim 10.

In addition, Applicants are adding new claim 37 to the application. Claim 37, dependent on claim 10, recites that the polyimide precursor is formed from the oxydiphthalic acid or acid anhydride thereof as a reactant and a diaminodiphenyl ether as a diamine reactant. Note, for example, the last full paragraph on page 8 of Applicants' specification.

Applicants respectfully submit that all of the claims now presented for consideration by the Examiner patentably distinguish over the teachings of the references as applied by the Examiner in rejecting the claims as formerly in the application, that is, the teachings of Hagiwara, et al., No. 5,472,823, to Aldrich, et al., No. 5,399,460, and to Mueller, et al., No. 5,106,720, under the provisions of 35 USC 102 and 35 USC 103.

Initially, Applicants respectfully traverse the conclusion by the Examiner that Hagiwara, et al. is a reference under "35 U.S.C. 102(b)". That is, Hagiwara, et al. has a patenting (publication) date of December 5, 1995, which is after the effective filing date of the above-identified application (which is September 2,

1994, the filing date of prior application Serial No. 08/299,628). Clearly, Hagiwara, et al. is not prior art under 35 USC 102(b).

It is acknowledged that Hagiwara, et al. has a filing date of January 15, 1993, prior to the effective filing date of the above-identified application. However, this does not qualify Hagiwara, et al. as prior art under 35 USC 102(b).

Moreover, while noting that Hagiwara, et al. has a filing date prior to the effective filing date of the above-identified application, note that Hagiwara, et al. and the above-identified application are each assigned to Hitachi Chemical Co., Ltd. Enclosed herewith please find copies of recorded Assignments for each of U.S. Patent No. 5,472,823 and for the above-identified application. Note that the Assignment for the above-identified application was initially filed in prior application Serial No. 08/299,628, filed September 2, 1994, but the Assignment for No. 08/299,628 refers to "all divisions, continuations and extensions thereof".

Noting that the above-identified application and Hagiwara, et al. have common ownership; and that the above-identified application was filed on January 14, 2000, and thus subject to the provisions of revised 35 USC 103(c), it is respectfully submitted that Hagiwara, et al. does not constitute prior art under 35 USC 103 (e.g., even in light of 35 USC 102(e)) in connection with the subject matter claimed in the above-identified application. Since Hagiwara, et al. is an

essential part of the rejection set forth in Item 3 on page 3 of the Office Action mailed October 18, 2001, it is respectfully submitted that this rejection must fall because Hagiwara, et al. has been disqualified as prior art under 35 USC 103.

For this reason alone, reconsideration and withdrawal of the rejection of claims 10-14, 21-25, 28-31 and 34-36 under 35 USC 103(a), as set forth in Item 3 on pages 3 and 4 of the Office Action mailed October 18, 2001, is respectfully requested.

In addition, note that each of claims 25 and 31 has been amended to recite a property of the polyimide precursor (that is, a transmittance, at 365nm, of a 20 $\mu$ m thick film of the polyimide precursor). It is respectfully submitted that Hagiwara, et al. does not disclose, nor would have suggested, such transmittance of a 20 $\mu$ m thick film of the polyimide precursor.

The Examiner has relied on Synthesis Example 19 in columns 49 and 50, and Example 13 in columns 51 and 52 (note Table 1 in column 52), as "anticipating" previously considered claims including, inter alia, claims 25 and 31. The Synthesis Example and Example relied on by the Examiner do not disclose a transmittance; moreover, it is respectfully submitted that the diaminodiphenyl ether in Synthesis Example 19 utilizes a diamine having a specific photosensitive side chain X as in the formula (II) shown in claim 1 at column 54 of the patent. This photosensitive side chain (3-(2-methacryloyloxyethyl)ureido group) provides a polyimide precursor much

different than that described in the above-identified application. Thus, clearly Hagiwara, et al. would have neither taught nor would have suggested the composition according to the present invention, including the polyimide precursor. Moreover, it is again emphasized that Hagiwara, et al. does not qualify as prior art under 35 USC 103. Thus, it is respectfully submitted that the subject matter of, e.g., claims 25, 29-31 and 34-36 patentably distinguish over the teachings of the references of record, including Hagiwara, et al. (which is not applicable as prior art under 35 USC 103).

In view of the foregoing comments and amendments to the claims, reconsideration and allowance of all claims remaining in the application are respectfully requested.

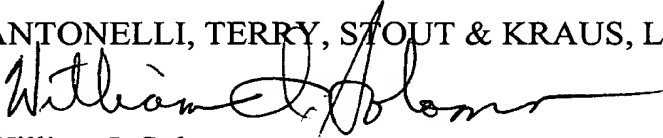
Attached hereto is a marked-up version of the changes made in the claims by the current Amendment. This marked-up version is on the attached page which is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the

filing of this paper, including extension of time fees, to the Deposit Account No. 01-2135 (Case No. 511.33114VV5) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read "William I. Solomon", written over the printed name.

William I. Solomon

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WIS/slk

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend the claims presently in the application as follows:

25. (Twice Amended) A photosensitive resin composition which comprises (1) a polyimide precursor formed from an oxydiphthalic acid or acid anhydride thereof with a diamine, (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20 $\mu$ m thick film thereof has a transmittance, at 365nm, of at least 40%.

31. (Twice Amended) A photosensitive resin composition for i-line stepper using monochromatic light, which comprises (1) a polyimide precursor, formed from an oxydiphthalic acid or acid anhydride thereof with a diamine, (2) an addition-polymerizable compound and (3) a photoinitiator, the polyimide precursor being such that a 20 $\mu$ m thick film thereof has a transmittance, at 365nm, of at least 40%.

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Hideo HAGIWARA; Makoto KAJI;  
Masataka NUNOMURA;

2. Name and address of receiving party(ies)

Name: Hitachi Chemical Co., Ltd.

Internal Address:

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Other

Street Address: 1-1, Nishi-shinjuku 2-chome  
Shinjuku-ku, Tokyo, JAPAN

XX

Execution Date: October 24, 1994

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)

Serial No.: 08/299,628

Filing Date: September 2, 1994

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: David T. Terry

Internal Address:

Street Address: 1300 North Seventeenth St.

Suite 1800

City: Arlington State: VA ZIP: 22209

6. Total number of applications and patents involved:

1

7. Total fee (37 CFR 3.41) \$ 40.00

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To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

David T. Terry

Reg. No. 99-138

Name of Person Signing

*David T. Terry*

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November 2, 1994

Date

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## ASSIGNMENT

For good and valuable consideration, the sufficiency and receipt of which is hereby acknowledged, as a below named inventor, I hereby sell and assign to Hitachi Chemical Co., Ltd. of 1-1, Nishi-shinjuku 2-chome, Shinjuku-ku, Tokyo, Japan its successors and assigns or other legal representatives all my rights, title and interest, in and for the United States of America, in and to

## PHOTOSENSITIVE RESIN COMPOSITION

invented by me (if only one is named below) or us (if plural inventors are named below) and described in the application for United States Letters Patent therefor, Serial No. 08/299,628 filed September 2, 1994, and all United States Letters Patent which may be granted therefor, and all divisions, continuations and extensions thereof, the said interest being the entire ownership of the said Letters Patent when granted, to be held and enjoyed by said Hitachi Chemical Co., Ltd., its successors, assigns or other legal

representatives, to the full end of term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me or us if this assignment and sale had not been made;

And I hereby agree to sign and execute any further documents or instruments which may be necessary, lawful, and proper in the prosecution of the above-named application or in the preparation and prosecution of any continuing, continuation-in-part, substitute, divisional, renewal, reviewed or reissue applications or in any amendment, extension, or interference proceedings, or otherwise to secure the title thereto in said assignee;

And I do hereby authorize and request the Commissioner of Patents to issue said Letters Patent to said Hitachi Chemical Co., Ltd.

(Full Name)

(Signature)

- 1) Date 24, October, 1994 Inventor Hideo HAGIWARA Hideo Haginara  
 Residence Same as Post Office Address Citizenship Japan  
 Post Office Address 9-4, Heiwa-cho 1-chome, Hitachi-shi, Ibaraki-ken, Japan
- 2) Date 24, Oct, 1994 Inventor Makoto KAJI Makoto Kaji  
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- 3) Date 24, October, 1994 Inventor Masataka NUNOMURA Masataka Nunomura  
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- 5) Date \_\_\_\_\_ Inventor \_\_\_\_\_  
 Residence \_\_\_\_\_ Citizenship \_\_\_\_\_  
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Shinjuku-ku,  
Tokyo, JAPAN  
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A. Patent Application No.(s) \_\_\_\_\_  
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City: WASHINGTON, State: D.C. ZIP: 20006

6. Total number of applications and patents involved: 1  
7. Total fee (37 CFR 3.41): \$40.00  
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8. Deposit account number: 01-2135  
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9. Statement and signature:  
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.  
David T. Terry January 15, 1993  
Name of Person Signing Signature Date  
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# ASSIGNMENT

(JOINT

ORS)

IN CONSIDERATION of the sum of One Dollar(\$1.00) or the equivalent thereof, and other good and valuable consideration paid to Hideo HAGIWARA, Makoto KAJI, Hiroshi NISHIZAWA, Kenji SUZUKI and Yasunori KOJIMA,

citizens of Japan by HITACHI CHEMICAL COMPANY, LTD., a corporation organized under the laws of Japan,

located at 1-1, 2-chome, Nishishinjuku, Shinjuku-ku, Tokyo, Japan,

receipt of which is hereby acknowledged, we, the said Hideo HAGIWARA, Makoto KAJI, Hiroshi NISHIZAWA, Kenji SUZUKI and Yasunori KOJIMA,

do hereby sell and assign to said HITACHI CHEMICAL COMPANY, LTD.,

~~their~~ successors and assigns, all our right, title and interest, in and for the United States of America, its in and to "PHOTOSENSITIVE RESIN COMPOSITION"

invented by us and described in the application for United States Letters Patent therefor, executed on even date herewith, and all United States Letters Patent which may be granted therefor, and all divisions, continuations and extensions thereof, the said interest being the entire ownership of the said Letters Patent when granted, to be held and enjoyed by said HITACHI CHEMICAL COMPANY, LTD.,

~~their~~ Successors, assigns or other legal representatives, to the full end of term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made;

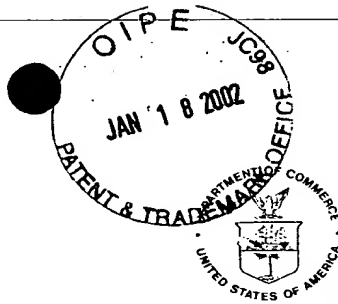
And we hereby agree to sign and execute any further documents or instruments which may be necessary, lawful, and proper in the prosecution of said above-named application or in the preparation and prosecution of any continuing, continuation-in-part, substitute, divisional, renewal, reviewed or reissue applications or in any amendment, extension, or interference proceedings, or otherwise to secure the title thereto in said assignee;

And we do hereby authorize and request the Commissioner of Patents to issue said Letters Patent to said HITACHI CHEMICAL COMPANY, LTD.

Signed on the dates indicated aside our signatures:

INVENTORS (発明者フルネームサイン)	Date Signed (署名日)	Witnesses (立会人サイン)
1) <u>Hideo Hagiwara</u> (Hideo HAGIWARA)	December 28, 1992	RECORDED PATENT & TRADEMARK OFFICE
2) <u>Makoto Kaji</u> (Makoto KAJI)	December 28, 1992	JAN 15 93
3) <u>Hiroshi Nishizawa</u> (Hiroshi NISHIZAWA)	December 28, 1992	
4) <u>Kenji Suzuki</u> (Kenji SUZUKI)	December 28, 1992	
5) <u>Yasunori Kojima</u> (Yasunori KOJIMA)	December 28, 1992	
6) _____ ( )	_____	_____
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ASSIGNOR:  
HAGIWARA, HIDEO

DOC DATE: 12/28/92

ASSIGNOR:  
KAJI, MAKOTO

DOC DATE: 12/28/92

ASSIGNOR:  
NISHIZAWA, HIROSHI

DOC DATE: 12/28/92

ASSIGNOR:  
SUZUKI, KENJI

DOC DATE: 12/28/92

ASSIGNOR:  
KOJIMA, YASUNORI

DOC DATE: 12/28/92

RECORDATION DATE: 01/15/93      NUMBER OF PAGES 002      REEL/FRAME 6413/0120

DIGEST :ASSIGNMENT OF ASSIGNORS INTEREST

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PATENT NUMBER

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